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THE FARM INDEX

U.S. Department of Agriculture/August 1972

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PROCUREMENT SECTION
CURRENT SERIAL RECORDS



U.S. grain exports will swell substantially as a result of a recent purchase by the Soviet Union. Under the agreement announced last month by the President, the USSR will buy \$750 million over the next 3 years of U.S.-produced grains (wheat, corn, barley, sorghum, rye, and oats—at the purchaser's option).

The average purchase rate of \$250 million a year represents 17 percent of our commercial grain sales to all markets during 1969-71. For the first year, beginning August 1, 1972, the Soviet Union has agreed to take at least \$200 million worth.

This grain purchase—largest in Soviet history—will make the USSR the second biggest buyer of U.S. grains after Japan. During the past 3 years, Japan's purchases from us averaged \$437 million. Other leading customers included the Netherlands (\$135 million), Canada (\$126 million), the United Kingdom (\$102 million), and Italy (\$86 million).

The USSR's purchase will be made through private U.S. grain traders. As part of the agreement, however, USDA will make credit available through its CCC Export Credit Sales Program. Loans are to be repaid in three annual installments, with credit outstanding at any one time not to exceed \$500 million.

Credits on deliveries through March 31, 1973, will carry the credit program's present interest rates of 6½ percent per year on letters of credit issued by U.S. banks and 7½ percent on letters issued by foreign banks.

Tobacco use in the 1971/72 marketing year didn't come up to the previous year's, mainly due to a sag in exports. But leaf use was still bigger than the 1971 crop, so carryover dropped. It's estimated about 4 percent smaller than last year's 3.7 billion pounds—least since 1952.

Slight gains in cigarette use more than made up for declines in cigars and smoking tobacco (see story, page 17). Chewing tobacco production advanced a bit, while snuff changed little.

Tobacco shipments in the year ending June 30 fell 5 percent (preliminary estimate). Japan took more than the previous season, but sales lagged to the United Kingdom and West Germany.

Lively demand plus tight supplies have pushed farmers' soybean prices to the highest since the late 1940's. They're likely to average around \$3 per bushel in the 1971/72 season, 15¢ more than the previous year.

Carryover September 1 is placed at roughly 60 million bushels, compared with 99 million on that date in '71. With utilization this season averaging about 100 million bushels a month, the prospective carryover would be equal to 2-3 weeks' supply.

This year's soybean crush, estimated at 720 million bushels, looks to be 5 percent smaller than the record crush of 1970/71. Besides the high soybean prices, reduced crushings reflect a narrowing of margins to processors along with weakened demand for soybean oil.

Domestic use of soybean oil might reach 6.4 billion pounds in the current season, a shade more than last year, but exports will be off. They're estimated at a little over 1.3 billion pounds—400 million less than in 1970/71. Factors in the decline include severe competition for our commercial exports, cutbacks in food aid shipments under P.L. 480, and sharp increases in world production of edible oils.

Slow demand and relatively sizable inventories of U.S. soybean oil indicate this summer's oil prices will average well under the 14¢ per pound of July-September (crude, Decatur).

Stocks of soybean oil next October 1 may build to around 800 million pounds against last year's carryover of 773 million. But total carryover—including soybeans on an oil equivalent basis—will be down at the end of the soybean marketing year. The oil equivalent carryover on September 1 may approximate 1.5 billion pounds, at least 20 percent less than in 1970/71.

Milk prices are running ahead of a year ago. Prices received by farmers averaged \$5.92/cwt. in the first half of the year—up 3 percent from the 1971 period. For the rest of '72, it's expected prices will continue some 3 percent above last year's.

Prices of manufacturing grade milk have risen faster than the price of all milk, chiefly because of brisk demand for cheese. American cheese production gained 11 percent in January-June, and the increase was sopped up by higher commercial disappearance. ERS dairy analysts figure cheese will go into storage at relatively high prices. Prospects are for more increases in the wholesale cheese price as summer and fall progress.

About fluid milk sales, economists believe they'll be up in '72 for the second year in a row. Lowfat and skim milk will again come in for most of the increase, but cream is also gaining and whole milk is about holding its own. This pattern promises to strengthen dairy farmers' prices on two counts: by increasing the amount of milk moving into higher-valued bottling categories; and by reducing the amount of fat moving into the CCC's hands as butter.

First half 1972 farm cash receipts from milk sales are estimated at \$3.6 billion, up about 4½ percent from a year ago. Larger milk marketings, as well as higher prices, brought about the rise. Increases anticipated in the last half of the year may boost total cash receipts from dairying to over \$7 billion, up from \$6.8 billion in '71.

For growers of non-citrus fruits, the summer of '72 will go down as the season of short supplies—particularly apricots, sweet cherries, and freestone peaches, except the early crop in the Southeast. Winter tree damage, spring freezes, and poor pollination conditions were responsible.

Supplies of Bartlett pears from the West Coast will also be smaller than in '71, though not quite as low as in other recent years. California's strawberry production will decrease somewhat, with the late spring crop

Contents

down sharply. Larger crops are indicated for Southeastern peaches, tart cherries, and California plums and nectarines.

The look-ahead for poultry products: fewer eggs, more broilers and turkeys.

Egg production was up in the first 4 months of the year, but by May, it trailed year-earlier levels for the first time since mid-1969. Though layer productivity increases will limit output declines for the remainder of this summer, increases in the rate of lay will be held down by an aging flock and more molted layers. Egg prices began picking up in mid-June, and should continue to rise as output eases.

Reduced pork supplies and high prices of competing red meats have encouraged broiler and turkey growers to expand production from a year ago. Despite the production gains in prospect, broiler prices in July-December may average slightly above the 1971 period. Turkey prices from now on are seen averaging near those of the second half of '71.

Trade milestone: U.S. agricultural exports in fiscal 1972 crested at around \$8 billion, according to a preliminary estimate released in mid-July. This was 3 percent more than the previous year's record shipments

Most of the increase came from higher prices, and most showed up in January-June. Before then, exports were below year-earlier totals due to dock strikes, the international monetary crisis, and other trade dampening developments.

Exports of soybeans and products set a new high of more than \$2 billion—the first time an individual commodity topped that mark. Grains and preparations fell 6 percent to \$2.5 billion, with wheat accounting for most of the decline.

Rice exports—over 36 million bags—were about the same as in 1971, as were those of tobacco, valued at \$571 million. Cotton exports totaled 3.3 million bales, compared with 3.7 million a year earlier.

FARM

RURAL

MARKETING

CONSUMER

FOREIGN

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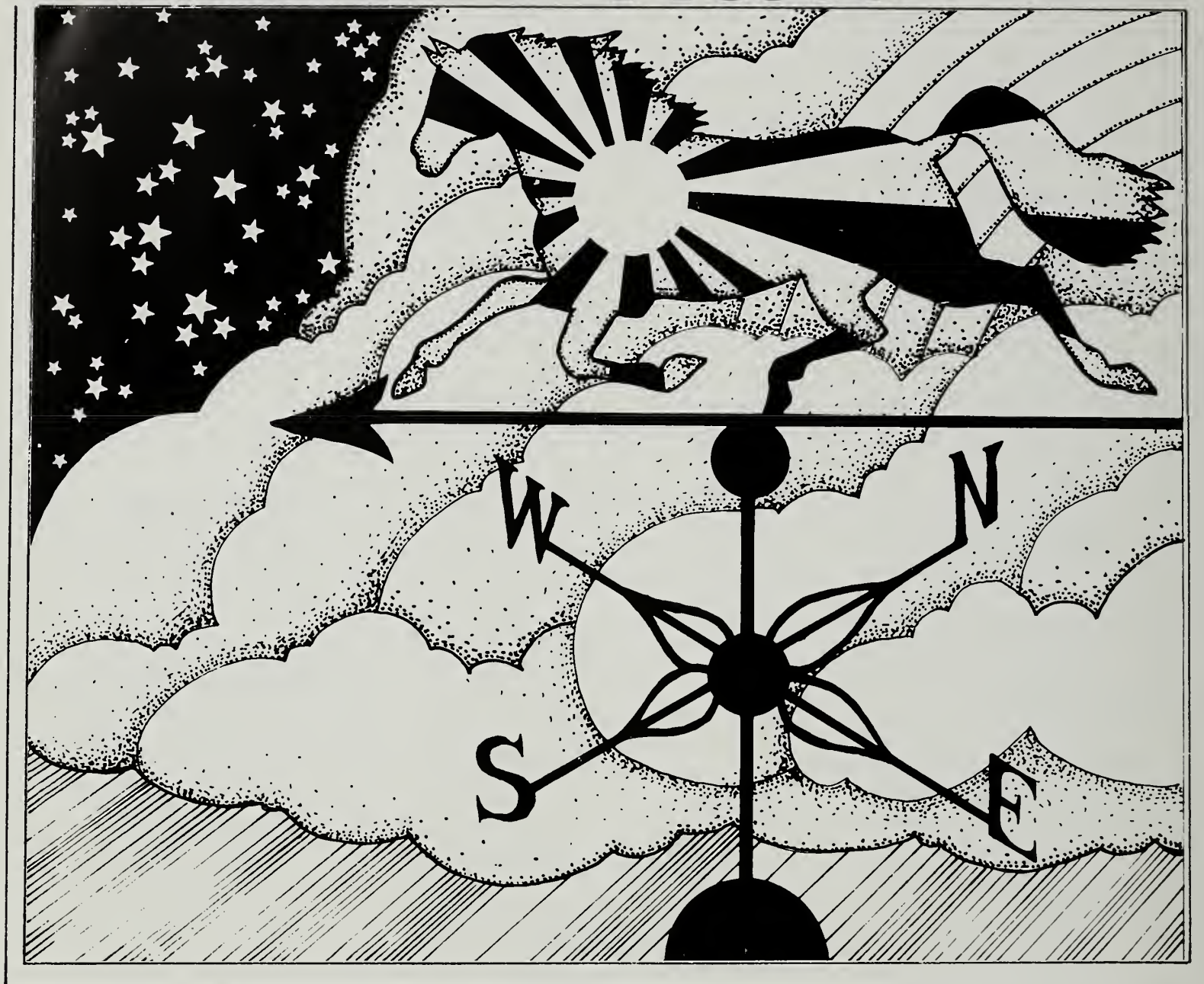
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Weather Watchout



At the fingertips of the modern farmer is a wealth of weather information, much of which springs from the weather-crop service of the USDA cooperating with the U.S. Department of Commerce.

Planting time arrives under sunny skies, and the Iowa farmer's got his mind made up: he'll put half his cropland to corn, the rest to soybeans.

With a twist of a radio dial, the farmer's plans change.

The news is, "Ohio's soybeans got

off to a bad start due to heavy rains, says the *Weekly Weather & Crop Bulletin* . . . fields impassable . . . planting 2 weeks behind schedule."

A lot could happen by harvesttime, but the Iowa man sees the odds in his favor. Figuring Iowa's soybeans will beat Ohio's to market and fetch a good price, he opts to go heavier on beans than corn.

This year marks the 100th anniversary of the weather-crop service, a joint effort of the U.S. Departments of Commerce and Agriculture. Though the *Weekly Weather & Crop*

Bulletin is mainly for farmers and to help them make decisions, farmers aren't the only users.

Agricultural buyers follow the weather-crop reports to keep track of the ever-changing availabilities of crop and livestock products. The reports influence the inventories of processors, and, ultimately, the price consumers pay.

The *Weekly Weather & Crop Bulletin* traces its ancestry to the *Weekly Weather Chronicle* first issued in 1872 by the Army Signal Corps. Discontinued 9 years later, the *Chroni-*

cle was revived in 1884 as the *Weather Crop Bulletin*. It's been published continuously ever since, though under various names.

Keystone of the weather-crop service is teamwork. Thousands of people supply material and data for the weekly *Bulletin*: county agents, numbering about 3,000, employed by USDA's Cooperative Extension Service . . . crop reporters of the Statistical Reporting Service (SRS) . . . State climatologists of the Commerce Department . . . and more than 13,000 weather observers, mostly volunteers, working with Commerce's National Oceanic and Atmospheric Administration.

State SRS offices prepare weekly weather and crop reports based on the information gathered by the co-operators. These Monday afternoon releases are very popular in the farm States and get extensive coverage by radio, TV, and newspapers.

Advance copies of the State reports are wired to the National Meteorological Center at Suitland, Md., then relayed to USDA's South Building in Washington, D.C. That's where the national summary is compiled by a team of weather experts of the Commerce Department and a crop statistician from Agriculture.

Tuesday noon of each week, less than 24 hours after the first State report arrives at weather headquarters in Suitland, the national summary is released to the news media.

The agricultural summaries, presented by crop and State, cover a broad spectrum of weather-crop developments. Besides temperature and rainfall, a typical State summary might give the percent of the season's crop that's been planted or harvested the week before, condition of the crop in the field, quality of the harvest, drought or flood conditions, and the state of pastures and livestock.

In addition, the *Bulletin* features maps of the Nation showing such phenomena as crop moisture, precipitation and temperature data for the previous week and a 30-day prediction published bi-monthly, areas

where precipitation is persistently abnormal, the average number of days each year when farmers can expect thunderstorms, and the total "growing degree days."

The *Bulletin* also carries special articles of interest to agriculture. For example, in a spring issue a meteorologist discussed a serious outbreak of screwworm in Texas and New Mexico, and the weather conditions responsible for insect development. Southern Corn Leaf Blight was widely written about in the *Bulletin* in 1970 and '71.

Weather services to agriculture are far ranging. Radio and TV stations in many areas issue bulletins keyed to the needs of local producers, such as the cold wave warnings and advisories on when to spray crops and apply fertilizers. There's also the National Fruit-Frost Service and the National Agricultural Weather Service Program.

Farmers who rely on irrigation benefit from the long range forecasts of water supplies, as well as from the current estimates of soil moisture. In some places, daily readings are taken on soil temperatures, information that's crucial to getting a crop in the ground at the earliest possible moment to get good yields.

Another service to agriculture are weather-related research studies, many of them done by USDA.

One study by the Economic Research Service (ERS) focused on weather's role in the steady uptrend in corn yields. Yields have more than doubled since 1930, a fact which some people attribute mainly to a cycle of unusually good weather in the Corn Belt States.

But this study concluded that most of the yield increase came through the development of improved seed varieties, greater use of nitrogen fertilizer, and from higher planting rates and other cultural practices.

A cooperative research project by the University of Arkansas and ERS examined the variable weather conditions during the critical rice planting period, and how they may affect

(Please turn page)

Weather-wise Farmers

Bad weather has always been the bane of the farmer, but its effect on agriculture is more predictable—if not controllable—than ever before.

One of the farmers' aids to interpreting the meaning of weather forecasts is the National Agricultural Weather Service Program launched by the Commerce Department in the mid-1960's. The Agricultural Weather Wire Service, as it's often called, is now available to radio and TV broadcasters in parts of 21 States.

Is the service effective? Getting the answer was one object of a survey in Indiana done by ERS in cooperation with Purdue University.

The program in Indiana, which got going in 1966, offers three main types of weather information—zone forecasts and agricultural weather advisories, issued three times daily, and a farm weather summary, issued once each weekday. The advisories and weather summary tell producers how the weather during the next 36 hours will help or hinder agricultural operations.

Findings of the Indiana survey showed that the entire 7-million-acre study area was adequately served by the 42 radio-TV stations that subscribed to the weather wire.

Interviews with operators of 145 farm units found that all received precipitation forecasts and generally used them in making decisions.

The advisories for specific farm operations were actually used by around 55 percent of potential users—farmers who raised the crops to which the special forecasts applied. Most widely used were predictions on haying conditions, followed by harvesting conditions, field operations, and spraying.

Farmers placed the highest value on weather information supplied during the spring. And—those who said they benefited from this service tended to grow more corn and soybeans than the non-users; apply more recent technology in the production of crops; place greater value on all types of weather information; and have a better understanding of the probability terms used in precipitation forecasts. (2)

farmers' selection of equipment. The economists developed guidelines for the most economical combination of land and equipment under various weather assumptions. Such information helps save money for farmers who tend to overinvest in farm machinery.

Studies on hailstorms are another example of ERS's interest in weather problems. At the request of the Interdepartmental Committee on Atmospheric Sciences, ERS 3 years ago did a preliminary analysis of costs and benefits of suppressing hail, which causes crop losses of around \$300 million a year.

Last year, the Federal Council for Science and Technology approved a number of national projects to accelerate progress in weather modification. For one of these—a hail research experiment to develop new seeding technology—ERS has been asked to assist in the economic evaluation of the hail suppressing activities. (1)

ERS Reviews Priorities, Sets Up New Division

ERS has recently given a new look to its research priorities and broadened its work in international economics.

These changes came with the appointment of Dr. Quentin M. West as administrator of ERS earlier this year.

The activities of what used to be the Foreign Economic Development Service (FEDS) have been transferred to ERS and are now being carried out by the new Foreign Development Division. FDD's main job is to coordinate and give leadership to USDA's support of international training and assistance programs.

Also, two former ERS units (Foreign Regional Analysis, and Foreign Development and Trade Divisions) have been combined into a Foreign Demand and Competition Division, which focuses on problems in agricultural trade.

The two divisions report to Dr.

Lyle P. Schertz, deputy administrator for international economics.

The other five divisions of ERS were not affected by the reorganization. Reporting to Dr. Kenneth R. Farrell, deputy administrator for commercial agriculture, are the divisions of Economic and Statistical Analysis, Farm Production Economics, and Marketing Economics. The Economic Development and Natural Resources Economics Divisions report to Dr. Linley E. Juers, deputy administrator for natural resources and rural economic development.

International competition, in Dr. West's view, is one of several pressing problems needing research in commercial agriculture. But in addition to the concerns of commercial farming, more research should be directed toward the special needs of the large and growing population of rural residents.

In a paper presented at a meeting of directors of State agricultural experiment stations, Dr. West grouped the research priorities for commercial agriculture in five categories.

Performance of the production-marketing system. Dr. West noted that researchers are "called upon to back-off from the detailed problems at the individual farm level" and to deal with issues cutting across all stages of the beef industry, the feed grain industry or the soybean industry. "For example, will the beef industry be able to deliver, by the end of this decade, as much beef as Americans want to consume and at prices they consider reasonable?"

Structural changes in commercial agriculture. These include declining farm numbers, increasing farm size, roles of corporations and conglomerates, and shifts in vertical integration and contract farming. We need to identify and explain the facts, reasons for changes, and implications of these changes, Dr. West said.

International competition. One dollar in seven of farm cash receipts comes from exports. International competition is stiffening, and policy-

makers need current assessments of the situation.

Relations with low-income nations should also be studied, to include programs of U.S. economic and technical assistance that help these countries become better customers for our farm products.

Impact of farm policies on the general public. Example: the social costs when machines displace unskilled labor.

Impact of general public policies on agriculture, such as the consequences of setting minimum standards for animal waste disposal . . . of banning antibiotics in feeds . . . of banning or limiting the use of pesticides and other chemicals.

About rural development priorities, Dr. West said that a broad agenda would include:

- Bringing community services up to par—the problems of housing, sewer and water systems, and health services.

- Developing our human resources—How should rural schools be financed? What kind of vocational training should be provided for young people?

- Expanding employment opportunities—the role of industrialization in development of particular rural areas; the training needs of rural people and their willingness to be trained; and the impact of industrialization on local governments and low-income families. (3)

Farm Machinery Makers Finance Sales to Farmers

Farm machinery manufacturers in recent years have taken a more active role in financing the sale and leasing of machinery and equipment to farmers, according to a study of six of the seven full line machinery companies.

Between 1963 and 1970, the number of loans by the six companies to finance the sale of tractors and machines more than doubled—from 102,000 to 215,000. The average size of loans rose from about \$2,600 to over \$4,400, and the total annual vol-

ume loaned increased from \$260 million to \$950 million. By the end of 1970, farmers owed \$1.2 billion to these machinery companies or to their credit subsidiaries.

The data suggest that the machinery company loans to farmers had relatively short repayment terms, averaging 2 years or less. about three-fourths of the outstanding debt was repaid or renewed each year.

Farmers generally repaid these machinery loans as scheduled, and at the end of 1970 only little more than 2 percent of the outstanding debt was overdue. Uncollectible losses of the machinery companies were also small. They amounted to only three-tenths of 1 percent of outstanding debt in 1970.

Loans by manufacturers to dealers to finance the rental of machinery

and equipment were still small in 1970, with outstandings amounting to only 2.4 percent of loans held for financing sales. However, this level was $3\frac{1}{2}$ times that of 1967 and all six companies had gone into the business of providing credit for rentals. Most of the reporting companies expected loans for leasing equipment would continue to expand. (4)

Northwest Cattle Ranches Had Record Income in '71

Last year's net returns were the highest ever on commercial cattle ranches in the Northern Plains and Northern Rocky Mountain areas—two of the country's leading cow-calf regions.

Net incomes in 1971 averaged \$31,500 on ranches studied in the

Northern Plains, about \$5,500 more than in 1970. Incomes on Rocky Mountain ranches, averaging \$31,800, were nearly a fifth larger.

Record-high prices received for calves contributed to most of the increase. Also at record levels were calving rates and calf market weights, and, in the Northern Plains, the size of the breeding herd. Both areas had lower death losses than in 1970. Range conditions were less favorable in the Rocky Mountain area than in the Plains, but other factors compensated.

Since 1960-64, net ranch incomes in the two areas have gone up $2\frac{1}{2}$ times. Though the cost of ranching has risen 30-40 percent, ranchers have managed to offset the increase through greater output per unit of input. (5)

ON THE TRACTOR TRAIL

The Nation's "herd" of tractors is getting smaller but stronger.

The average tractor today has a horsepower of 47, nearly 40 percent more than 10 years ago. Meanwhile, there're 6 percent fewer of them.

Last year, more and more of the more powerful tractors were sold. Those with at least 120 horsepower pulled 10 percent of total sales compared to 3 percent in 1968. Tractors with 140 horsepower or more doubled their sales volume last year.

In addition, sales of 4-wheel drive tractors hit 2,500 in 1971, the first year in which nationwide statistics were kept.

For each farmworker there's now an average of 48 tractor horsepower compared to 9 in 1950. By 1975, this figure may reach 55, reflecting the increasing cost of labor.

Just about all types of major farm machinery are decreasing in numbers, a result of fewer and larger farms and larger and more efficient machinery. Only self-propelled combines have increased since 1964. (6)

Michigan Dairymen Polled On Waste Management

The sprawl of urban people into suburbs and rural areas has intensified the problems of animal waste management. Coupled with the fear that livestock wastes will pollute surface and ground water is a growing concern about pervasive odors.

Michigan is typical of several States where farmers increasingly count nonfarmers among their neighbors. A mail survey completed by some 340 southern Michigan dairy farmers last year provided data on manure handling systems, practices, and costs on farms with varying herd sizes and housing systems.

The dairy operations were classified by herd size—30–49, 50–74, 75–99, and 100 cows and over. In all size groups, the scraper-loader-spreader system was the predominant manure handling method. Use of liquid systems tended to be restricted to larger farms with covered housing facilities. Liquid systems were used on 16 percent of all farms having more than 100 cows.

In all, dairymen reported seven combinations of herd size, housing, and manure handling systems. These

ranged from a 46-cow operation with stanchion housing and a gutter cleaner-spreader system to a 158-cow farm with open lot housing and a liquid manure handling system.

Roughly half the dairymen said there were nonfarm residences located within half a mile of their barnyards. About 65 percent had nonfarm neighbors within half a mile of fields where they spread manure.

Dairymen were concerned about complaints, as public pressure could spur legislation requiring costly manure handling systems. As the accompanying tables show, investments in complete manure systems differ widely with the degree of mechanization, size of herd, and storage capacity per cow.

Results of the Michigan study showed that investments in the conventional scraper-loader system ranged from \$116 to \$59 per cow in open lot housing, versus \$130 to \$76 per cow in covered housing.

Per cow investments averaged considerably higher for liquid manure handling systems. Used with covered housing facilities, these systems ranged from \$193 on farms with 50–74 cows, to \$123 on farms with more than 100 cows. (8)

Farm Output Comes Back Strong After '70 Lag

Over most of the country last year, farmers increased their acreage and enjoyed a better than average growing season.

The result? A new record in output. While 1970's output had gone down slightly from the previous year due mainly to corn blight, 1971's output climbed 9 percent.

Using 1967 as a base year (1967=100), last year's farm output index was 111 compared to 90 in 1960 and 73 in 1950.

Output set a record in almost all regions. Only in the Southern Plains (Oklahoma and Texas) was it lower—an early drought caused output to decrease by 7 percent.

Crops were harvested from 310 million acres, 13 million more than in 1970 and the largest acreage since 1960; crop production was at a record level due to both the additional acreage and higher crop yields; use of fertilizer set a new record; and livestock production reached a new high, 3 percent above 1970.

Crop production per acre increased 9 percent over 1970 and 4 percent above 1969, the previous record year.

The total volume of inputs used in agriculture in 1971 remained the same as in the previous 2 years, but the inputs were 9 percent more productive than in 1970. This was due to the better than average growing conditions, increased use of available farm resources such as cropland, and greater application of improved technology such as fertilizer.

When it comes to farmers' labor productivity—how much an hour's labor produces—output continued to climb during 1971.

Labor productivity gains were greater for crops, up 11 percent, than for livestock—up 8 percent.

Of all the regions, the Corn Belt had the greatest gain in labor productivity—up 20 percent. Only in the Southern Plains did labor productivity go down—6 percent—and again, the reason was drought. (7)

OPEN LOT FREE STALL HOUSING

Item	50–74 cows		75–99 cows		100 and more cows	
	Scraper loader system	Liquid system	Scraper loader system	Liquid system	Scraper loader system	Liquid system
Number of farms	42		38	3	41	3
Cows per farm	61		86		157	
Acres cropland/cow	4.3		4.1		2.7	
Investments	Dollars		Dollars		Dollars	
Manure spreader	1,404		1,924		1,988	
Scraper and loader	1,388		2,230		2,537	
Tractors	4,266		4,485		4,766	
Totals	7,058		8,639		9,291	
Per cow	116		100		59	

COVERED HOUSING

Item	50–74 cows		75–99 cows		100 and more cows	
	Scraper loader system	Liquid system	Scraper loader system	Liquid system	Scraper loader system	Liquid system
Number of farms	7	6	14	4	13	9
Cows per farm	62	62	84	93	123	194
Acres cropland/cow	3.7	5.2	3.5	2.8	2.9	2.7
Investments	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Manure spreader	1,493	883	1,319	1,233	1,988	2,016
Scraper and loader	1,611	884	1,515	912	2,537	588
Tractors	5,030	1,900	4,411	3,200	4,766	8,735
Pump and agitator		1,407		1,458		1,489
Liquid spreader		1,450		1,650		1,623
Storage tank		5,415		7,375		9,386
Totals	8,134	11,939	7,245	15,828	9,291	23,837
Per cow	131	193	86	170	76	123

Domestic applications of herbicides, fungicides, and insecticides have totaled 750 to 800 million pounds in recent years. Besides farmers, big pesticide users include homeowners and industry.

Pesticides. The word evokes images of farmers spraying and dusting cropland for the numerous insects, weeds, and fungi that menace agriculture.

True, farmers are the country's biggest pesticide users. They account for a little over half of all pesticides used in the U.S. In 1970 farmers spent close to \$900 million for insecticides, herbicides, and fungicides.

Who are the other users? Look around . . . at the closely cropped fairway . . . the narrow yet navigable waterway . . . the flawless rosebush. Chances are, they were treated with pesticides.

Industry is the largest nonagricultural user of pesticides, accounting for nearly a fifth of domestic sales. In 1970, industrial firms spent an estimated \$300 million on pesticide chemicals.

Industries apply a wide range of insecticides to protect their products, workers, buildings, and grounds. Carpet makers, for example, treat rugs with persistent types of insecticides to provide long term protection against carpet beetles and other insects that damage animal fibers.

Insecticides are also used to prevent contamination of food and stored materials, and to safeguard buildings against the onslaught of termites.

Fungicides perform a variety of industrial chores—to prevent mildew in paint, and to curb slime formation in manufacturing processes.

One of fungicides' major uses is to preserve wood, such as railroad ties, telephone poles, dock piling, and fences. Preservatives prolong these uses of wood up to 50 years—against roughly 10 years for untreated woods.

Herbicides are used by industry mainly to protect property against weeds and brush. Large shares go to



destroy unwanted growth along rights of way, such as highways, railroads, and waterways.

Industrial firms also employ pesticides to treat forest land. It's estimated that private use of pesticide on forests is four times greater than government applications.

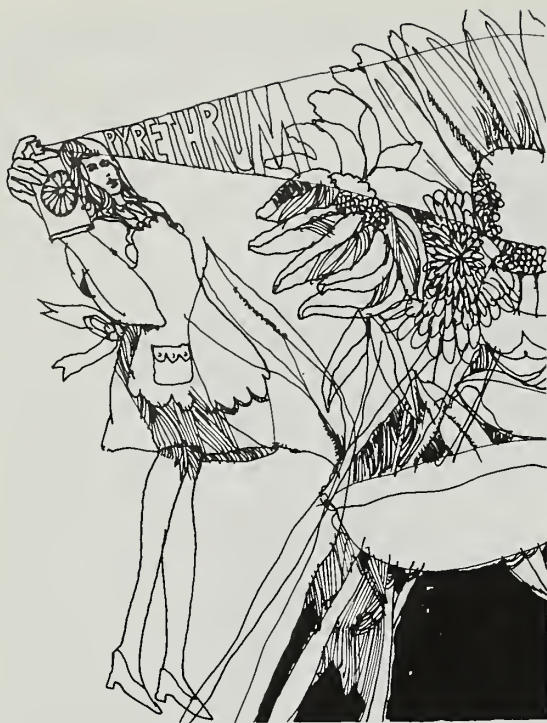
Homeowners and other urban and suburban residents account for 15 to 20 percent of all pesticide use. In 1970, pesticide preparations for household, lawn, and garden pest control had a retail value of nearly \$300 million.

Pesticides designed for homeown-

ers usually contain smaller shares of active ingredients than those for agriculture and industry. The low concentrations minimize danger to neighboring property, people, household pets, and sensitive plants.

Herbicides are increasingly sold as part of a lawn-care package that contains needed plant nutrients as well as pesticides to check unsightly weeds and undesirable species like crabgrass. In 1968, about 4 million acres of lawn and other turf (golf courses, public greens, sports fields, etc.) received herbicide treatments

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at an average cost of \$30 per acre.

A major urban-suburban use of insecticides is to control structure pests such as termites and wood borers. Upon completion, many new buildings are treated with insecticides to stop termites.

Insecticides, sold mainly in small aerosol containers, have become commonplace in the home for curbing pests such as moths and weevils that destroy clothes and furnishings, and lice, flies, and roaches that may carry disease or contaminate food.

Household use of fungicides is generally confined to treating diseases that attack lawns, shrubbery, fruit trees, and ornamentals.

Pesticides have proved invaluable in public health control, particularly in fighting insect-carried diseases such as malaria, typhus, and yellow fever.

The World Health Organization (WHO) estimates there are 10,000 kinds of insects that directly or indirectly infect man with disease. These insects, according to WHO, cause half of all human deaths, sicknesses, diseases, and deformities.

In the U.S., insect-borne diseases are not considered a serious problem, although more than half the States reported such diseases over the past 3 years. Insecticides are used most often to control the carriers of various types of encephalitis.

Herbicides also play a key role in health control by checking the growth of allergenic-producing plants like poison ivy, poison oak, and ragweed. Each year poison oak and poison ivy cause roughly 2 million cases of skin poisoning and irritation, for an estimated loss of 333,000 work days.

Federal, State, and local governments are among other users of pesticides, with 10 percent of domestic consumption. Roughly 21 million acres were scheduled to be treated under Federal programs between January and August, 1971.

For all of 1971, pesticides were applied on about 13.5 million acres to arrest the Venezuelan Equine Encephalitis (VEE) epidemic. Another 11.6 million acres in a 9-State area were treated under the Agricultural Research Service's fire ant control program.

Most of the mosquito control districts throughout the country are organized around city or county governments. In 1970, these units spent an estimated \$75 to \$100 million for mosquito control. (9)

Earthy Yearbook

USDA's Yearbook of Agriculture is out early this year—just in time for the fall planting season.

Entitled *Landscape for Living*, it focuses on gardening, a pastime favored by 80 million Americans, and contains much practical, basic background information.

You can read about plants that will withstand and actually reduce pollution, go around the world with one of USDA's plant scientists searching for new and better plants, learn about plants that will attract birds to your garden, how to control garden pests, how to control erosion . . . even how to be a "lazy gardener" with care-free plants.

It's all just a part of the information in the 62 chapters of the 1972 Yearbook, available now.

The Department does not give out or sell the Yearbook. Copies are for sale by the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Price is 3.50. (12)

'Rural' Doesn't Always Imply Poor Health Care

Just because it's a "rural area," don't write it off as having inferior health services.

A study by ERS and Michigan State University suggests there's a long list of factors, besides rurality, that may determine the availability and adequacy of health care.

The researcher considered 15 socioeconomic variables plus three indicators of rurality to find how these related to the availability of health services in Michigan. The measures of health care were the number of general hospital beds for residents of each county, nursing home beds, Doctors of Medicine (MD's), Doctors of Osteopathy (DO's), and the number of dentists.

Results showed many of the 15 variables were related to the adequacy of health care. For example, hospital facilities varied with rates of population change and migration, years of schooling of the county's residents, the percentage of the labor force working outside the county, and the proportion of the population aged 60 and over.

The measures of rurality in this study were (1) presence in each county of a town with 5,000 population, (2) a county's geographic location, and (3) its distance from a city of 25,000 population.

Findings indicated rural counties with no town of at least 5,000 people fared less favorably, compared to the others, in terms of hospital beds and nursing home beds per 1,000 residents. The rural counties had more dentists, though they had fewer DO's. However, there was no significant correlation between the number of MD's and whether the county had a town of 5,000 people.

Testing the second measure of rurality — geographic location — the study found that health services weren't necessarily more deficient in rural regions than urban. Overall services appeared to be least adequate in the most rural of Michigan's three regions (the Upper Peninsula) and

in the most urbanized (Southern Michigan).

Distance from a city of 25,000 people had a bearing on health services, but the more remote areas weren't always the worst off. Estimated availability of general hospital beds turned out to be greatest for areas more than 50 miles from a large city and lowest for areas within 25 miles. Of three distance zones from a city (less than 25 miles, 25-50 miles, and 50 miles and over), the 25-50-mile zone had the highest ratio of nursing home beds, DO's, and dentists. (11)

In Poverty, Elderly More Contented Than Young

Who is "happier," a city resident or a rural one, the young or the old—given the fact each is in poverty.

An ERS study of 400 people—half living in Southern Appalachia, half in a metropolitan center, half in their 20's, half past 60—gives a slight edge to the older city residents.

In both city and country, the older group—with a median age of 69—reported greater contentment with their immediate social environment than did younger persons.

This probably reflects the tendency of older people to adjust to their conditions of life, and the tendency of younger persons to be dissatisfied, an ERS sociologist explained.

Attitudes of urban and rural residents differed the most when it came to their feelings about their immediate social environment.

The rural residents were more inclined to worry about their families and relatives. They were also less satisfied with their housing, felt more financial deprivation, and expressed greater dissatisfaction with their communities than did their urban counterparts.

However, a larger proportion of both the young and old in rural areas felt they could count on their families for financial help and advice. And more rural than urban persons felt that their neighborhoods were ideal places in which to live. (10)



Men and Milestones

WASHINGTON, May 1866—Commissioner of Agriculture Isaac Newton names Jacob R. Dodge to top USDA statistical post.

The Department's chief statistician for almost 25 years, J. R. Dodge did more than any other man to lay the foundation of the modern agricultural estimating and reporting services.

Armed with little else than pencils, paper and the services of volunteers across the country, he hammered together reports praised for their accuracy and eagerly awaited by farmers and agricultural traders alike.

Born on September 28, 1823, in New Boston, New Hampshire, and educated in common schools and academies, Dodge worked first as a teacher in Mississippi and as an editor, publisher, and reporter in the North. He came to Washington in 1861 and joined the Department as a clerk in 1862.

Besides compiling statistical data, he edited the Department's

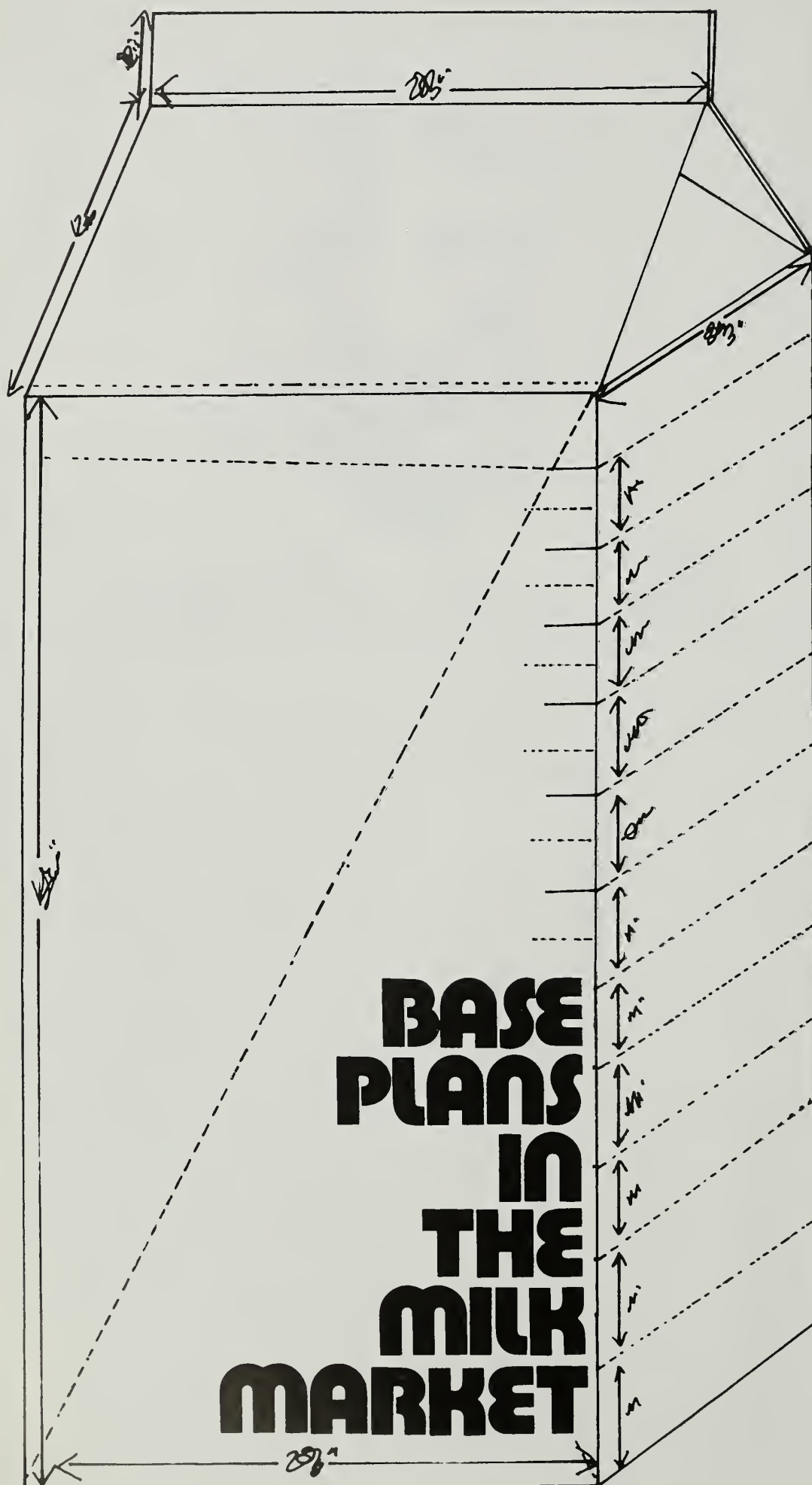
early *Reports*, a job for which his journalistic experience especially qualified him.

Following a dispute over funding in 1878, Dodge went briefly to the Treasury Department, then conducted the famous Agricultural Census of 1880, returning to his old job at USDA in 1881.

Throughout his career, Dodge tried continually to increase the scope and usefulness of his work, as, for example, in 1889 when he advocated crop forecasting, calling it the vital need of the day.

He emphasized the use of scientific analytical tools and sought to popularize statistics. He provided information on foreign agriculture, and twice attended international meetings as one of the Department's first overseas representatives.

Dodge left Government service in 1893 at age 70 to become the *Country Gentleman's* statistical editor. He stayed with the magazine nearly a decade, until his death on October 1, 1902. (13)



Just how do you assure dairy farmers they'll get a fair return . . . and still not attract so much production that there's a surfeit of milk.

That's one of the unsolved problems facing the milk marketing system—and one examined in a new ERS study on base plans designed to deal with the problem.

On the one hand, when producers' prices are set to assure an adequate but not excessive supply of milk for consumers, the prices may not yield an adequate return to dairy farmers.

But when prices are set high enough to assure farmers an adequate return—and maintained for an extended time—they attract unneeded resources into milk production, resulting in unwieldy surpluses.

With milk supplies on the increase now, the potential is there for surpluses to build up and pose a threat to producer incomes and to market stability.

To head off such a buildup of supply, there are several options: lower the milk price; increase demand, which is being attempted by industry promotion; and enact base plans.

In their analysis of these base plans, ERS economists conclude that so far none has been totally successful. Some, in fact, have actually attracted additional resources into milk production.

In essence, base plans set a quota for the dairy farmer on how much of the higher priced Class I (fluid) milk he can market. Any milk in excess of this is sold at a much lower price. Some base plans are "open," allowing new producers relatively easy entry into the fluid milk market. At the other extreme are "closed" base plans. They're designed to foreclose the fluid milk portion of the market to outside producers.

The Food and Agriculture Act of 1965 first authorized Class I base plans in Federal milk orders through December 31, 1969. Puget Sound, Wash., was the only market to adopt a plan under the 1965 Act.

It was a relatively closed base plan and the farmer's quota was derived from a base-building period longer than a year. The goal was to control annual milk deliveries. Market rights were established for longer than a year.

Class I base plans more recently authorized by the Food and Agriculture Act of 1970 for Federal order markets are currently receiving much attention as a means of discouraging excess resources from entering dairying and avoiding undue buildup of supplies.

The ERS study, looking at the history of base plans, noted that Class I base plans under Federal orders may not necessarily be effective supply control measures, and may, instead, actually enhance supplies. In the Agricultural Act of 1970, supply control is apparently considered secondary to the objectives of income distribution and market access.

The plans update bases each year, existing producers can up their bases, and new producers can build a base in a relatively short time. The minimum price paid for excess milk is set at the level prevailing for manufacturing milk, which may be higher than the marginal cost of production for some efficient producers.

"Given current legislation, cooperatives' closed-base plans probably can manage milk production more effectively than Federal order Class I base plans," the study reports.

Under the closed-base plans of co-ops, extensive full-supply contracts with handlers have the potential of foreclosing alternative fluid milk markets to nonmembers; entry of new producers can be curtailed; cooperatives do not have to be concerned about bases taking on an unreasonable value; excess prices can be set at extremely low levels—thus making it unprofitable even for relatively efficient producers to produce milk at the surplus price.

However, the cooperatives face some legal hurdles when attempting to regulate milk supplies; namely, whether this is in violation of the

Capper-Volstead Act and the anti-trust laws.

The ERS study suggests that if dairy farmers want an effective supply control program (to discourage excess milk supplies when prices are above market clearing levels), cooperatives would have such options as:

Use the blend pricing system now provided by most Federal orders;

Petition for the most restrictive Class I base plans possible under the Federal order system;

Operate their own supply management system without having Class I base plans under the Federal order system;

Superimpose their own supply management systems on base plans incorporated in Federal orders;

Seek revised Class I base plan legislation; or

Seek new legislation specifically authorizing a national quota program.

One of the primary issues is just how producers want to handle production and marketing decisions.

Do they want to market within the framework of a price-oriented system . . . or a centralized, coordinated system? For a number of examples show that once an industry abandons price as a means of coordinating supply and demand and begins to use a centrally coordinated system, an adjustment away from control is unlikely. (14)

Cotton Enjoys Growing Share in Fiber Blends

The blend trend in the textile industry is toward an even split between cotton and manmade fibers.

In a survey of 62 textile mills, accounting for over half of all cotton used in the U.S. in 1971, more than 73 percent of the cotton used in blends was blended 50-50 with manmade fibers. This compares with only 20 percent reported in a 1965 survey, when blends had either a very high or low percentage of cotton.

Due in part to cotton's relatively high price, the blending of cotton

with manmade fibers has grown sharply since 1964. That year only 8 percent of all cotton system spindles were running cotton/manmade blends; 84 percent ran 100-percent cotton; and 8 percent ran 100-percent manmades.

The blend proportion, by 1971, had risen to 27 percent. All-cotton's share dropped to 62 percent, whereas manmade's climbed to 11 percent.

Blends are expected to make further gains for reasons of cotton's increasing price; a scarcity of short staples and low grades needed for certain yarn construction, and declining prices of manmade fibers.

These gains could hold the domestic market for cotton near its present level, despite a growing market for total fiber. Total U.S. mill consumption in the 1971/72 marketing year is likely to match last season's 8.1 million bales, according to preliminary estimates of ERS. (16)

Fed Cattle Marketed In Orderly Flow

Cattle enter feedlots in seasonal waves. Yet fed cattle leave the lots in a steady flow the year-round.

Peak placement periods vary among feeding areas. They reflect the availability of feeder cattle and feed supplies, types and size of feeding operation, climate, and management techniques.

In Iowa, for example, cattle placements fluctuate sharply during the year, but peak in December and ebb in July. Late fall and early winter placements are common throughout the Corn Belt, where relatively small feedlots (under 1,000 head) predominate.

Many Iowa farmers feed grain they've produced, and feed only one turn of cattle each year. Fed cattle marketings reflect only a small share of the seasonality of placements. Marketings dip 20 to 30 percent below average in late winter and early spring—because of the drop in summer placements.

The steady flow of fed cattle to slaughter suggests that cattle

weights vary considerably when the cattle enter feedlots, and that farmers apply equally variable management techniques.

Except for seasonal bulges in May and October, cattle placements in Texas feedlots show less fluctuation than in Iowa. Average Texas lots are far larger than those in Iowa. Last year, feedyards with 1,000-plus capacity accounted for 95 percent of all cattle marketings in Texas.

Since most large feedlots keep animals only long enough to meet minimum requirements for Choice grade, Texas feedlot operators probably average 2½ turns per year.

As in Iowa, Texas feeders move cattle to slaughter more uniformly than they buy them. Slight dips and bulges in seasonal marketings, however, are linked to the seasonal pattern of placements.

In four other States (Arizona, California, Colorado, and Nebraska) the pattern is similar—placements fluctuate widely, but year-round marketing patterns hold fairly steady.

California marketings reflect the seasonal placement pattern more than any of the other States. This suggests that feeder cattle vary little in weight and condition when they're placed on feed, and that length of the feeding period isn't too flexible.

Combined placement and marketing patterns of the six States reflect characteristics of both small and large commercial feeders. The combined pattern of placements isn't much different than that of Nebraska, which has a mix of large and small feedlots. But changes in the combined pattern are less severe than in Nebraska's. Two-thirds of the fed cattle marketed in the 6 States originate from only 2 percent of the feedlots.

The combined marketing pattern of the six States is smoother than that of any individual State. The steady pattern indicates that cattle feeders throughout the country are well aware of the competitive advantages of orderly marketing. (15)

Bargaining Boards: Options For Late Potato Producers

Greater revenues might accrue to western growers of late potatoes if they set up a bargaining board to negotiate prices and other sales terms with processors and handlers. This assumes, however, producers would be willing to accept production and marketing controls.

ERS reached this conclusion by running a simulation model to project the outcome of alternative policies open to a bargaining board. Results were presented for three of six policy choices analyzed:

- Price stability policy. The goal is to achieve constant prices to growers for all years from 1968 to 1980. To do this would require adjustments in production from 1968 levels projected without a board, and in the volume of potatoes going to the fresh market.

- Revenue increase policy. Goal is to attain a specified percentage increase in gross revenue from one year to the next. This could be brought about through negotiating higher prices, larger marketings, or a combination of the two.

- Acreage increase policy. Acreage expands by a given percentage from year to year, with prices established by demand conditions.

The model found that all three policies resulted in a decrease in acreage and production of western potatoes during 1968–80 relative to expected levels under the present system. Reason is the bargaining board put restrictions on industry expansion.

But the acreage increase policy, compared with the others, produced a higher average gross revenue. Projected gross revenue dropped 0.7 percent (see table below) from what it might have been without the bargaining board system. Even so, the average price received indicates the revenue per unit of output was greater with the bargaining board. The results of the acreage increase policy would also seem to be acceptable to handlers and consumers.

In the case of western late potatoes, the characteristics favoring the success of bargaining boards include —(1) price fluctuations due to variation in yearly production; (2) different markets for late potatoes—fresh, frozen, dehydrated, and chips; (3) a relatively well defined production area with all producers facing similar production and marketing conditions; (4) importance of the western crop in terms of income and share of the total U.S. potato market; and (5) the industry's experience with marketing orders. (17)

MARKETING BOARD POLICIES: CHOICES AND OUTCOME

Variables	Change from current system under specified policies*		
	Price stability, \$3.10 per cwt.	Revenue increase, 12 pct. annually	Acreage increase, 2 pct. annually
	Percent		
Western acreage	—5.7	—16.0	—6.4
Western production	—5.4	—16.0	—6.5
Western weighted average price received	—3.7	17.6	6.2
Western gross revenue	—8.9	—1.0	—0.7
Fresh utilization	12.0	—5.2	—0.1
Other utilization	—17.8	—15.2	—8.4
Fresh retail price	—1.2	3.0	1.2
Frozen retail price	9.9	—1.8	0.9

* Relative to the expected levels under present system.



WHAT'S FOR DINNER?

It's a question that comes to mind to just about everyone sometime during the day—What's for dinner? But today's answer varies from that of 40 years back.

There's a certain amount of history being made tonight as you sit down to dinner.

It's in the little things, like preferring skim milk or lean meat, or easy-to-prepare foods like instant potatoes.

It's these "little things," over time, that make dramatic changes in what the average American eats, as witnessed by per capita figures compiled by ERS over the years.

If we could turn back the clock to 1930 and sit down for a meal—or

even peek into the refrigerator or ice box—we'd see:

There's no frozen orange juice. Margarine hasn't caught on yet. There're no canned baby foods, no frozen vegetables, no sherbet. And chicken is still pretty much of a Sunday dinner treat.

You'd have a 50-50 chance of being served pork, for it accounted for half of per capita meat consumption.

And you'd have a 90-percent chance of being served butter rather than margarine, compared to a 30-percent chance today.

You'd have, too, about a 70-percent chance of being served fresh—or home prepared—fruits and vegetables rather than commercially canned or frozen ones (in fact, frozen foods didn't come on the mar-

ket much before the 1940's). Use of processed forms did not surpass fresh use until the mid-1950's.

One of the biggest changes in the past 40 years is in meat consumption. It's up 45 pounds per person to 168 pounds a year (retail cut equivalent).

The popularity of beef accounts for just about the entire 45-pound increase. Pork consumption is currently about 5 pounds per person higher, while veal and lamb and mutton use has declined.

On the whole, the average American over the years has increased his consumption of meat and poultry, processed fruits and vegetables, margarine, and salad and cooking oils.

(Please turn page)

Meanwhile, he has cut down on dairy and cereal products, coffee, potatoes, and fresh fruits and vegetables (although lettuce use has increased and other salad ingredients have remained the same—tomatoes, cucumbers, and celery).

When it comes to explaining the

Turn of the Century

Back about the time the Wright brothers were taking to flight, Americans were on quite a different diet than they are today.

People of moderate means ate mostly solid, filling foods—meats, poultry, fish, potatoes, bread and other starchy foods, dry beans and peas.

Fresh fruit was expensive.

Hardly anyone ate salads. In fact, because of the different growing seasons, it was about impossible to have both lettuce and tomatoes at the same time.

And vegetables were limited to what was in season locally, with the exception of those that could be stored in the cold cellar, such as cabbage, carrots, and onions, and those that were canned or dried.

A typical dinner for a city family of average means around the turn of the century might be pea soup, beef stew, boiled potatoes, and bread.

The menu was also limited somewhat by cooking facilities. Just about all foods were prepared at home. So even in the city in summer, it would be necessary to fire up a coal or wood stove in order to bake a roast.

But for today's family, dinner choices have broadened. There's a wide choice of meats, fruits, vegetables, and processed foods possible year round even within a moderate budget. And today's kitchen equipment and commercial processing permit a wide range of preparation methods.

A typical menu in the 1970's might include beef roast instead of the beef stew at the turn of the century, baked potato and bread and rolls are likely staples, frozen green beans and a lettuce and tomato salad with thousand island dressing have probably been added, and apple pie or other dessert is more common now. (19)

whys and wherefores of changes in diet, there are a diverse number of reasons.

Take price. That's one of the major reasons why poultry has taken wing and consumption more than doubled in the past 40 years.

Then there's the matter of convenience. Frozen, canned, and freeze-dried foods are generally increasing as people spend less time in the kitchen. Convenience is one reason, too, why potato consumption is starting to climb after years on the skids: there's handy instant potatoes, frozen french fries and potatoes au gratin and hash browns to cut down on kitchen time.

Other reasons for dietary changes:

Weightwatching—the results of which include greater use of non-caloric sweeteners, especially in soft drinks, and greater demand for low-fat and skim milk.

Lighter breakfasts—this is one reason egg consumption is down, and cereal products have dipped. A big breakfast of pancakes, eggs, and sausage is not the standby it once was.

Rising incomes—this tends to not only increase slightly the total quantity of food bought by a shopper, but to add more higher priced items to the shopping list.

Changes in living and working conditions—as just one example, consider the working wife. There're about 18 million of them. And when someone asks them "What's for dinner?," the answer's likely to be "Something quick." (18)

Orange Juice Preferred With Low Peel Oil Level

Frozen concentrated orange juice is usually made with low peel oil content on the assumption consumers prefer it that way.

However, little research has been conducted on how the amount of peel oil affects consumer taste preference.

That's why the Statistical Reporting Service (SRS) performed a consumer survey using orange juice containing various peel oil levels.

Volunteers "taste tested" the samples under controlled laboratory conditions in Chicago and Washington, D.C., and in a separate test, under more normal conditions in the home.

SRS tested four peel oil levels—one at the same level as that commonly used in frozen concentrated orange juice, one below that level, and two above.

The result: both adults and children indicated a preference for frozen concentrated orange juice with the lower levels of peel oil.

Peel oil is added in small quantity in the preparation of frozen orange juice to give it a bouquet, or body, that's similar to freshly squeezed juice. However, too high a level results in a bitter, oily taste. (20)

Sturdy Fabrics Show Strength In Cotton Sales

It's cheery news to the cotton farmer to see so many people today bedecked in denim and corduroy.

For in what might be called the "age of durable press," cotton has shown its greatest strength in growth in demand for all-cotton denim and corduroy.

Since 1968, denim production has doubled to 341 million square yards, and corduroy production nearly doubled, reaching 253 million linear yards in 1971.

Today, denim and corduroy add up to better than 12 percent of total cotton use—up from 5.6 percent in 1968. This increase is the equivalent of nearly 200 million pounds or about 400,000 bales of cotton.

The dramatic rise in demand for these two fabrics is credited to their appearance and comfort, and to fashion.

Corduroy, back in 1969, began its new wave of popularity in traditional pinwale and widewale, but today includes ribless and printed goods.

And while the rugged blue denim continues its seemingly ageless appeal, denim is also available now in other colors, in bright stripes, prints, and brushed fabric.

While both corduroy and denim

have been produced in blends, trade sources indicate that the blends haven't been able to duplicate the all-cotton fabric in comfort, feel, appearance, and versatility. (23)

Cigarettes Lead Gains At Tobacco Counter

On the smoking scene, cigarettes and chewing tobacco are on the rise, with cigar and pipe smoking drifting downward.

ERS reports cigarette consumption was up nearly 4 percent in the fiscal year ending June 30—due in part to a larger adult population and rising incomes. Per capita consumption rose about 2 percent.

But during that same period, cigar and cigarillo consumption dipped about 5 percent, reflecting the stronger cigarette demand.

Pipe smokers and roll-your-own-cigarette makers have also apparently cut down—consumption was off 7 percent.

Meanwhile, chewing tobacco production went up 2 percent, and the age-old snuff appeared to be holding its own after years of decline. (21)

Domestic Rice Use Up a Fifth in 3 Years

Though most rice grown in the U.S. is destined for the export market, a mounting quantity never leaves the country.

During the 1969/70 marketing year, domestic use totaled 20.6 million cwt.—up 20 percent from 1966/67. Around three-fourths of the increase is attributed to higher per capita consumption.

Direct food use, the most important outlet, made up 56 percent of the 3-year gain and amounted to 13 million cwt. in 1969/70. Of this, more than half was marketed in consumer packages of 5 lbs. or less. Nearly a fifth was specialty rices. Use of specialty rices in 1969/70 totaled more than 2 million cwt.

Processors took 37 percent of domestic rice marketings—about 2 percent more than in 1966/67. Brew-

ers upped their intake the most: more than 60 percent of all rice for processing went to make beer.

Though small relative to total use, the share of rice going for soups and "other products"—flour, seasoned and canned rice, feed, etc.—more than doubled over the 3-year span. Manufacturers of cereal and baby foods, meantime, cut back their rice purchases.

Rice used for package mixes vaulted to 299,200 cwt. in 1969. The share taken by package mixes 3 years earlier is not known, as the mixes were then classed with "other products." In 1966/67, however, the entire category of "other products" consumed only 121,000 cwt.

Long and medium grain rice are the most popular types, accounting for 95 percent of all rice marketed for direct food use in the United States. Specialty rices use the long grain variety almost exclusively.

Cereal processors lean to medium, short, and broken grains. Broken grain rice commonly goes into baby foods and beer. (24)

Fashion Gives Wool A Boost This Year

This fall and winter, the "classic" look is on the fashion runway. It means some wider use of traditional wool fabrics—such as tweeds, plaids, houndstooth checks.

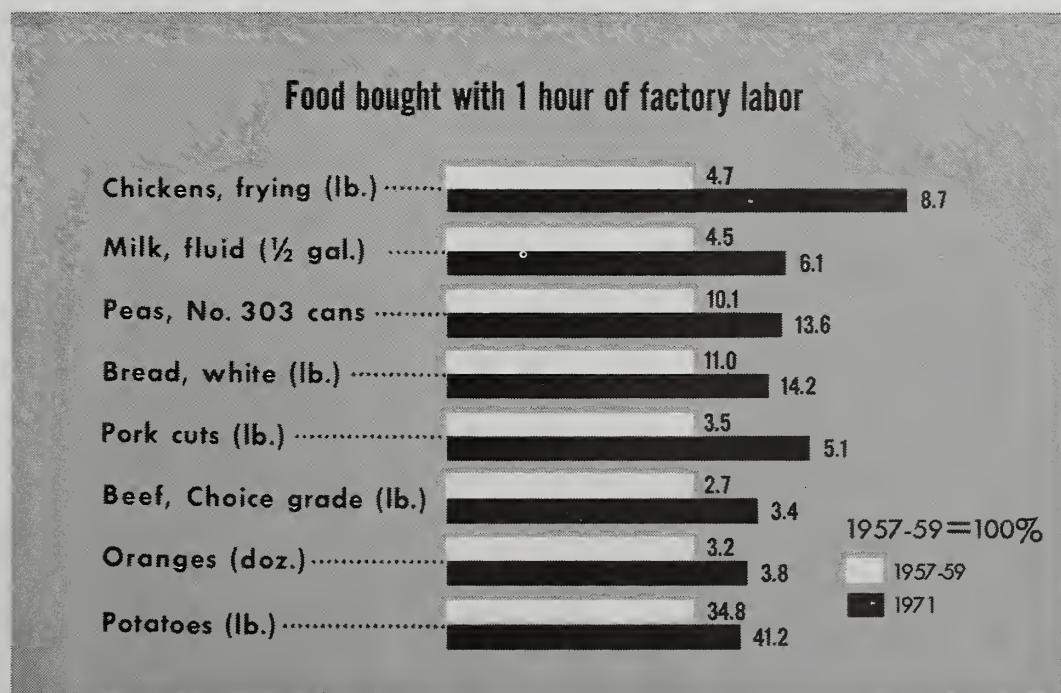
An added incentive to increased use of wool in clothing is the fact that manufacturers were able to buy raw apparel wool at low prices last year and the early months of this year.

However, stronger prices for wool this summer plus keen competition from manmade fibers will probably mean only moderate gains in use this year.

Last year, mill consumption of raw apparel wool, on a scoured basis, dropped 29 percent from 1970.

This spring's mill consumption of raw apparel wool was 10 percent higher than a year ago. Mill stocks of wool textiles were reduced, despite larger output, as more wool products went on the market and exports of wool textiles picked up. (22)

EARNING DINNER. Despite rising food prices, today's average working man can buy more food with an hour's wages than ever before. For instance, in an hour, he can earn enough money to buy nearly 9 pounds of chicken—just about twice as much as he could have bought more than a decade ago for the same amount of worktime. The bar chart below shows how much more food an hour of factory labor bought in 1971 than in the 1957-59 period. (25)



Despite numerous setbacks along the way, China has been gradually expanding the value of its livestock industry, with big strides made during the sixties.

Over the past few decades, the People's Republic of China has devoted increasing resources in attempting to develop a viable livestock industry to meet the increasing demand for meat and other animal products, and to furnish needed large animals for draft and transportation purposes.

By current estimates, livestock accounts for only 20 percent of the total value of Chinese farm output—compared with about 60 percent in the U.S. and 50 percent in the USSR.

These two countries are the only ones to outrank China in production of grain—its main crop—from which the more than 800 million Chinese

derive roughly 80 percent of their caloric intake.

By eating grain directly rather than feeding it to livestock, the Chinese maximize the number of calories taken from each acre of land. At the same time, however, they sacrifice quality in the diet, notably animal protein.

Though China is second only to the U.S. in pork production, today's per capita production of all meats is estimated no higher than the 1957–59 level of about 12 kilograms (26.5 lbs.).

China's livestock has suffered serious setbacks for decades. Particularly bad years in 1949 and 1961 were blamed on scarcity of grains and other feeds. And despite vigorous—but often ill-conceived—programs to boost production, the industry verged on collapse in the early 1950's and early 1960's.

Sharp advances prior to the Great Leap Forward of the late 1950's were virtually wiped out by the end of 1961, when the number of draft animals and hogs were trimmed to the 1949 level.

The rest of the 1960's proved an era of growth, as emphasis on livestock development apparently equaled that given to grain crops. The economic upset of the Cultural Revolution of the late sixties caused some setbacks, particularly to hog production but output was back to a record high by the end of 1970. Last year, hog production reportedly advanced 11 percent, with smaller gains for large animals and sheep.

Information about China's livestock situation is sketchy, but numbers of large animals (cattle, buffalo, horses, donkeys, camels) are currently estimated at 90–100 million; sheep and goats, 110–130 million; and hogs, 160–180 million.

CHINA'S LIVESTOCK: LONG MARCH FORWARD



Growth in the livestock sector during the past decade resulted largely from carrying out programs and policies formulated in the early years of Communist rule. Highlights of the programs include:

- establishing controls at all production levels to provide guidance and allow peasants to produce livestock as a sideline pursuit;
- abolishing class differences among herdsmen and upgrading their wages;
- improving pasture management through better grazing and conservation practices, and reclamation of wasteland;
- constructing pens and shelters to protect animals;
- eliminating rodents and predators;
- granting loans to improve herds and develop pastureland;
- developing veterinary services, and curbing epidemics and various animal diseases.

Massive programs were undertaken to control animal disease. Success of these efforts is partly reflected in last year's agreement by the Japanese government to import certain live animals and livestock products—after years of inspection and investigation by Japanese veterinarians.

None of the other countries that import Chinese meat and livestock products have ever named China as a source of major infectious animal diseases. Though diseases persist it's quite possible that China has many "clean" areas where livestock is produced exclusively for export.

Programs to expand livestock numbers have received more emphasis than those to upgrade quality. Quality improvement measures have included the establishment of state livestock ranches, breeding farms and stations, and mobile teams that tour production regions.

The teams teach modern animal husbandry techniques, including artificial insemination, cross breeding to develop hybrids, and selective breeding to improve native stocks.

In addition, the traveling teams train technicians, conduct experiments and demonstrations, organize training courses, and conduct animal shows.

The outlook for China's livestock industry is buoyed by high demand. Sheep, goats, hogs, poultry, and their products make excellent foreign exchange earners. And despite claims of rapid mechanization, more draft animals are needed in crop output.

China's Choicest Land

After centuries of intensive effort, the Chinese still cultivate only about 11 percent of their land. The remaining area is either too cold, too dry, or too rugged to be cultivated at current levels of technology.

The Chinese claim only a third of their cultivated land is fertile, and roughly half is mountainous. Thus, only a small share of the land presently in production is naturally endowed with the right combination of climate, soils, and topography needed for high crop yields.

Against this backdrop, it's remarkable that such a small land area—7 percent of the world's cultivated land—could sustain a fourth of the world's population. However, through multiple cropping China's annual sown area exceeds that of the U.S.

China relies mainly on intensive use of labor in agricultural production. Eighty to 85 percent of the population is directly engaged in agriculture compared with only 5 percent in the U.S.

In 1962, a dramatic policy shift made agriculture the main target for development, and generated a fairly rapid restoration of food production to the favorable levels preceding the Great Leap Forward in 1958. On a per capita basis, many crops—including some grains—haven't yet regained the pre-Leap level.

Since the mid-sixties, however, China's food production rate appears to have edged slightly ahead of population growth. This trend is expected to continue for the remainder of the current five-year plan—China's fourth—which began last year. (27)

Light industries—tanneries, textile manufacturers, and slaughterhouses—have swelled capacity to process animal products. China's silk industry is also booming.

Hogs, poultry, and silk cocoons are the anticipated growth leaders over the next several years. Large animals—mainly for draft—will advance at a slower rate and then ebb as mechanization increases.

Future development of large animals probably will be toward specialization for meat and dairy products. Some dairy herds now serve metropolitan areas, but their output is small and limited to local markets. Scattered reports indicate experimental work—probably on a small scale—with beef types of cattle.

Less is known of developments with sheep and goats, but attention appears focused on improving wool breeds. Construction of textile factories in sheep and goat centers reinforces the continued expansion of improvement programs.

Anticipated growth in poultry output may include collective chicken farming similar to that of North Korea. Though collective hog farming isn't mandatory, the government is pressing for more peasant participation in lifting hog production.

Future expansion is planned for all classes of livestock. Moreover, programs to upgrade quality will probably broaden as the use of large animals shifts more toward a food supply role. (26)

Stiffer Competition Ahead For U.S. Exports to Japan

Japan today is our No. 1 national export market for agricultural goods—buying vast quantities of soybeans, corn, wheat, sorghum, and millet.

But tomorrow could be a different story, unless the U. S. remains highly competitive. For Japan is investing billions in other countries—both in financial and technical aid—to diversify its sources of supply—including sources of farm products.

Last year, Japan's overseas investments hit \$3.6 billion. They're ex-

pected to reach \$10 billion in 1975 . . . and \$25 billion in 1980.

All this means that the U.S. will face direct competition in increasing its share of the Japanese market.

Projecting to 1980, the study finds that Japan's overseas aid and investment programs will have generated increases on the world market of millions of tons of feed grains and oilseeds and several hundred thousand tons of cotton.

The U.S., therefore, will have to be fully competitive to maintain its exports to Japan—competitive in quality, price, and terms and thoroughly reliable as a steady and sure source of supply.

The U.S. will probably maintain its feed grain export volume to Japan, up to 1980, but it might not maintain its present share of Japan's feed grain market. Much of that country's increased import requirements may be met by production from Japanese overseas projects.

In oilseeds, the U.S. may fare a bit better, for Japan's projects in this field have been recent, and output speculative.

Japan's overseas programs are spurred in part by commitments to

the United Nations to help less developed countries—it has pledged to reach the U.N. aid goal for developed countries of 1 percent of gross national product by 1975.

Other major aims of Japan's programs are to assure ample supplies of agricultural products and industrial raw materials for its own needs; to diversify sources to secure steady supply; to increase supplies in world trade to lower and stabilize prices; to provide foreign exchange to LDC's so they can purchase Japanese industrial products; and to obtain good will of countries receiving aid.

So far, Japan's foreign aid efforts have been concentrated in Southeast Asia. But the policy is now to expand aid more rapidly in Africa, Latin America, and Australia. The countries most likely to show significant increases in agricultural exports as a result of Japanese programs are Australia, Brazil, Cambodia, Indonesia, and Thailand. Among the farm products involved are corn, grain sorghum, peanuts, cotton, soybeans, green tea, meats, and tropical fruits.

Japan accounted for \$1.3 billion of the U.S.'s total farm exports of

\$7.2 billion in 1970, and the U.S. accounted for nearly a third of Japan's imports of agricultural commodities of \$4.2 billion in 1970. (28)

Big Jump Seen in U.S. Farm Exports to Cambodia

There's going to be a sharp increase in the year-end tally of U.S. agricultural exports to Cambodia, where farm production has been seriously disrupted by the military conflict.

Cambodia's 1972 agricultural imports from all sources are expected to reach \$30 million, up from \$15 million a year ago. Over half, around \$15 million, will come from the U.S. principally under the Public Law 480 program.

In 1971, the U.S. exported only \$5 million worth of farm products to Cambodia. Most of this year's larger shipments will consist of leaf tobacco, cotton, wheat flour, and vegetable oils.

Cambodia's total agricultural production in 1971/72 was roughly 40 percent below the peak year of 1969/70. Exports of rice, rubber, and corn have practically ceased. (29)

Recent Publications

INDICES OF AGRICULTURAL PRODUCTION IN AFRICA AND THE NEAR EAST 1962-71. Foreign Demand and Competition Division. ERS For. 265.

Indices of agricultural production for 49 countries are presented as part of a continuing assessment of the current agricultural situation abroad. The indices cover the period 1962-1971.

WORLD MONETARY CONDITIONS IN RELATION TO AGRICULTURAL TRADE. Foreign Demand and Competition Division. WMC-2.

This report provides economic intelligence on international monetary and financial affairs for those con-

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cerned with promoting exports of America's agricultural products.

ECONOMICS OF AGRICULTURE: REPORTS AND PUBLICATIONS ISSUED OR SPONSORED BY USDA'S ECONOMIC RESEARCH SERVICE, JULY 1970-JUNE 1971. Eleanor B. Lanier, Office of Administrator, Economic Research Service. Supplement No. 3 to ERS 368.

This supplement lists research publications produced or sponsored by the Economic Research Service on agricultural economics and related socioeconomic studies during July 1970 through June 1971.

CHANGES IN AGRICULTURAL PRODUCTION IN BRAZIL, 1947-65. Louis F. Herrmann, formerly Office

of Administrator, Economic Research Service. FAER No. 79.

This study considers factors related to changes in Brazil's agricultural output and productivity—the nation's great potential for expanding the area under cultivation, problems of soil fertility, conditions determining the balance between traditional and modern techniques, and general economic and cultural background.

OUT-OF-MARKET BULK MILK SHIPMENT CHARGES FOR SELECTED FEDERAL ORDER MARKETS. Herbert H. Moede, Marketing Economics Division. MRR 959.

Bulk milk shipments to destinations outside seven Federal milk order markets were analyzed on the basis of hauling charge per hundredweight, per hundredweight mile, and total shipment. The equation used in the analysis provided estimates of hauling charges within 10 percent of actual costs more than 80 percent of the time.

IMPACT OF JOB DEVELOPMENT ON POVERTY IN FOUR DEVELOPING AREAS, 1970. John A. Kuehn, Lloyd D. Bender, Bernal L. Green, and Herbert Hoover, Economic Development Division, in cooperation with Missouri University Agricultural Experiment Station and Arkansas Agricultural Experiment Station. AER 225.

Direct economic impacts of job development in new and expanded plants in four developing areas within Arizona, Appalachia, the Mississippi Delta, and the Ozarks were estimated in this study.

SUPPLEMENT FOR 1971 TO WOOL STATISTICS AND RELATED DATA, 1930-69. Economic and Statistical Analysis Division. Supplement for 1971 to Stat. Bull. No. 455.

This supplement contains 308 statistical tables on production, consumption, foreign trade, and prices of wool, mohair, and similar hair fibers as well as selected data on manmade fibers.

JAPANESE OVERSEAS AID AND INVESTMENTS — THEIR POTENTIAL EFFECTS ON WORLD AND U.S. FARM EXPORTS. Clarence E. Pike, formerly Foreign Regional Analysis Division. FAER No. 81.

To diversify sources of agricultural imports, Japan has been promoting production-for-export ventures in foreign countries. By 1980, these projects will have generated increases on the world market of millions of tons of feed grains and oilseeds, and several hundred thousand tons of cotton. These products will compete directly with those of the U.S., Japan's leading supplier in 1970.

MAJOR STATISTICAL SERIES OF THE U.S. DEPARTMENT OF AGRICULTURE—HOW THEY ARE CONSTRUCTED AND USED. VOLUME 11. FOREIGN TRADE, PRODUCTION, AND CONSUMPTION OF AGRICULTURAL PRODUCTS. Agriculture Handbook No. 365.

This series of volumes updates one published in 10 volumes during 1957-60 and describes each of the major statistical series of USDA, discusses its uses, and compares it with related series published by USDA or other agencies of the U.S. Government.

CANADA: GROWTH POTENTIAL OF THE GRAIN AND LIVESTOCK SECTORS. Edmond Missiaen and Arthur L. Coffing, Foreign Demand and Competition Division. FAER No. 77.

Although Canada's wheat production through 1975 will be up from 1970-71 levels, it is not expected to reach levels attained during the mid-1960's. Coarse grain production will continue to increase rapidly and beef production will increase but less rapidly than the sharply increasing domestic demand.

COST OF INSTANTIZING NONFAT DRY MILK. Herbert H. Moede, Marketing Economics Division. MRR 949.

Raw material costs make up more than 80 percent of the cost of instantized nonfat dry milk, with pack-

aging costs accounting for 10 percent, and instantizing and administrative expenses making up the balance, according to this study. The economic engineering method was used to develop the processing and fixed investment costs.

A HISTORY OF FEDERAL WATER RESOURCES PROGRAMS, 1800-1960. Beatrice Hort Holmes, Natural Resource Economics Division. Miscellaneous Publication 1233.

This publication discusses most of the significant Federal water resources legislation up to 1960 and describes the programs of U.S. planning and construction agencies; the extent of Federal river basin planning and development up to 1960; and the beginning of Federal encouragement of and cooperation with State and local planning.

THE POULTRY PROCESSING INDUSTRY: A STUDY OF THE IMPACT OF WATER POLLUTION CONTROL COSTS. James G. Vertrees, Marketing Economics Division. MRR 965.

This report presents estimates of costs to poultry slaughtering plants of utilizing wastewater treatment systems to meet likely effluent limitations, and discusses the economic impact of these costs.

COTTON GIN OPERATING COSTS IN WEST TEXAS—1970-71. Dale L. Shaw and Charles A. Wilmot, Marketing Economics Division. MRR 961.

This is the fifth annual report of cotton gin operating costs based on a sample of West Texas gins.

ORGANIZATION AND PRACTICES OF SELECTED TERMINAL WHOLESALE FLOWER MARKETS IN THE WEST. Richard Hall, Marketing Economics Division. MRR 960.

Part of a nationwide study of terminal wholesale flower markets, this report includes data on 22 wholesalers in two major western markets—Los Angeles and San Francisco, Calif.

COTTON GIN OPERATING COSTS IN THE MIDSOUTH—1969-70 AND 1970-71 SEASONS. Zolon M. Looney, Shelby H. Holder, Jr., and Joseph L. Ghetti, Marketing Economics Division. MRR 964.

Gin operating costs in the Midsouth were analyzed for the 1970-71 and 1969-70 seasons on the basis of a sample of 48 plants representing over 8 percent of the total ginning capacity of the region.

PLANNING NATURAL RESOURCE DEVELOPMENT — AN INTRODUCTORY GUIDE. George A. Pavelis, Natural Resource Economics Division. Agriculture Handbook No. 431.

This guide describes and illustrates principles for making rational deci-

sions on the scope, content, and scale of natural resource development programs. It's designed to help public officials and others who do no actual planning, but who make important decisions regarding projects, better understand and judge comparative merits of development programs.

IMPACT OF THE EXPANDED FOOD AND NUTRITION EDUCATION PROGRAM ON LOW-INCOME FAMILIES: AN INDEPTH ANALYSIS. J. Gerald Feaster, Marketing Economics Division. AER No. 220.

Evaluating the Expanded Food and Nutrition Education Program of USDA's Extension Service, this study found that after 6 months of participation, low-income families

had made substantial improvements in food knowledge and consumption practices.

PRICING PERFORMANCE IN MARKETING FRESH WINTER LETTUCE.

Robert W. Bohall, Marketing Economics Division. MRR 956.

This report focuses on the short-run weekly behavior of winter lettuce prices at shipping points and wholesale terminal markets. Since marketing channels have changed in recent years, growers, shippers, wholesalers, retail organizations, and others concerned with the lettuce industry are interested in how prices are established and, in turn, how they are reflected throughout the marketing system.

Article Sources

State publications indicated by (*) may be obtained only from the experiment station or university cited. Manuscripts and special material are usually available only on request to authors.

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3. Quentin M. West, Administrator. "Who Needs Help and How? New Priorities for Economic Research" (paper presented at the Workshop for the Directors of State Agricultural Experiment Stations and others, May 2, 1972, Arlington, Va.).
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29. John B. Parker, Jr., FDCD (special material).

NOTE: Unless otherwise indicated, authors are on the staff of the Economic Research Service (ERS) with their divisions designated as follows: Economic and Statistical Analysis Division (ESAD); Economic Development Division (EDD); Farm Production Economics Division (FPED); Foreign Demand and Competition Division (FDCD); Foreign Development Division (FDD); Marketing Economics Division (MED); and Natural Resource Economics Division (NRED).

Economic Trends

Item	Unit or Base Period	1967	1971 Year	1971 Jan.	1971 Nov.	1971 Dec.	1972 Jan.
Prices:							
Prices received by farmers	1967=100	—	112	112	120	119	123
Crops	1967=100	—	107	110	108	112	115
Livestock and products	1967=100	—	116	114	129	125	129
Prices paid, interest, taxes and wage rates	1967=100	—	120	120	124	125	125
Family living items	1967=100	—	119	118	123	123	124
Production items	1967=100	—	115	115	119	120	120
Ratio ¹	1967=100	—	94	93	97	95	98
Wholesale prices, all commodities	1967=100	—	113.9	113.8	117.4	117.5	118.2
Industrial commodities	1967=100	—	114.0	113.7	116.8	117.3	117.6
Farm products	1967=100	—	112.9	114.0	119.7	119.1	122.2
Processed foods and feeds	1967=100	—	114.3	114.5	118.6	117.7	118.6
Consumer price index, all items	1967=100	—	121.3	120.8	124.0	124.3	124.7
Food	1967=100	—	118.4	118.2	122.4	122.4	122.3
Farm Food Market Basket: ²							
Retail cost	Dollars	1,081	1,244	1,241	1,292	1,284	1,288
Farm value	Dollars	419	477	474	501	497	513
Farm-retail spread	Dollars	662	767	767	791	787	775
Farmers' share of retail cost	Percent	39	38	38	39	39	40
Farm Income: ³							
Volume of farm marketings	1967	100	108	80	85	78	82
Cash receipts from farm marketings	Million dollars	42,693	51,633	3,387	3,808	3,466	3,800
Crops	Million dollars	18,434	21,875	912	1,042	930	900
Livestock and products	Million dollars	24,259	29,758	2,425	2,766	2,536	2,900
Realized gross income ⁴	Billion dollars	49.0	58.6	—	62.3	—	—
Farm production expenses ⁴	Billion dollars	34.8	42.9	—	44.0	—	—
Realized net income ⁴	Billion dollars	14.2	15.7	—	18.3	—	—
Agricultural Trade:							
Agricultural exports	Million dollars	—	7,695	624	669	628	712
Agricultural imports	Million dollars	—	5,825	478	507	486	525
Land Values:							
Average value per acre	1967 = 100	—	⁶ 205	—	—	—	⁶ 205
Total value of farm real estate	Billion dollars	—	⁶ 221.1	—	—	—	⁶ 221.1
Gross National Product: ⁴							
Consumption	Billion dollars	793.9	1,046.8	—	1,103.6	—	—
Investment	Billion dollars	492.1	662.1	—	691.8	—	—
Government expenditures	Billion dollars	116.6	151.6	—	168.3	—	—
Net exports	Billion dollars	180.1	233.0	—	249.6	—	—
Income and Spending: ⁵							
Personal income, annual rate	Billion dollars	5.2	0	—	-6.2	—	—
Total retail sales, monthly rate	Million dollars	629.3	857.0	848.6	905.6	911.1	915.9
Retail sales of food group, monthly rate	Million dollars	26,151	34,071	33,502	36,450	35,975	36,787
Employment and Wages: ⁵							
Total civilian employment	Millions	74.4	79.1	78.8	⁷ 81.2	⁷ 81.2	⁷ 81.4
Agricultural	Millions	3.8	3.4	3.4	⁷ 3.5	⁷ 3.3	⁷ 3.4
Rate of unemployment	Percent	3.8	5.9	5.3	5.9	5.9	5.9
Workweek in manufacturing	Hours	40.6	39.9	40.0	40.3	40.5	40.5
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	3.57	3.55	3.74	3.77	3.78
Industrial Production: ⁵	1967 = 100	—	106	107	110	111	112
Manufacturers' Shipments and Inventories: ⁵							
Total shipments, monthly rate	Million dollars	46,449	55,158	55,123	59,894	60,716	—
Total inventories, book value end of month	Million dollars	84,606	101,665	101,869	102,450	102,357	—
Total new orders, monthly rate	Million dollars	46,988	55,074	54,100	60,614	61,240	—

¹ Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. ² Average annual quantities of farm food products purchased by urban wage-earner and clerical worker households (including those of single workers living alone) in 1959-61—estimated monthly. ³ Annual and quarterly data are on 50-State basis. ⁴ Annual rates seasonally adjusted first quarter. ⁵ Seasonally adjusted. ⁶ As of November 1, 1971. ⁷ Beginning January 1972 data not strictly comparable with prior data because of adjustment to

1970 Census data.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).

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